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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/671,229

09/24/2003

Leonard Forbes

MI22-2272

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21567

7590

03/29/2006

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EXAMINER

PHAM, LONG

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 03/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H/A

Office Action Summary	Application No. 10/671,229	Applicant(s) FORBES, LEONARD	
	Examiner Long Pham	Art Unit 2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-39, 48 and 49 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-19, 29-39 and 49 is/are allowed.
- 6) ☒ Claim(s) 14-16, 20-28 and 48 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>01/17/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14, 15, 16, 20-28, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (US publication 2003/0010980) in combination with Joret et al. (US patent 6,924,037).

With respect to claim 14, Yamazaki et al. teach an electronic apparatus fabrication method comprising (fig. 10A and associated text):

forming an insulative substrate 200 of an aluminum-based glass; and
forming a layer 202 comprising of semiconductor material over a substrate.

Further with respect to claim 14, Yamazaki et al. fail to teach that the insulative or glass or transparent substrate further comprises of aluminum oxycarbide.

Joret et al. teach forming a transparent or glass substrate comprises of aluminum oxycarbide to withstand high temperature annealing, bending or toughening. See col. 2, lines 5-20 and col. 8, lines 1-10.

It would have been obvious to one of ordinary skill in the art of making semiconductor devices to add aluminum oxycarbide to the glass or insulative substrate of Yamazaki et al. to achieve the above benefit.

With respect to claim 15, Yamazaki et al. further teach a semiconductor device comprising at least a part of the semiconductor material layer. See

fig. 10A and associated text).

With respect to claim 16, Yamazaki et al. fail to teach the semiconductor layer is formed directly on the insulative substrate.

However, the formation of a semiconductor layer directly on an insulative substrate is well-known.

With respect to claims 20, 21, and 22, since Yamazaki et al. in combination with Joret et al. teach an insulative substrate made of aluminum based glass that comprises of aluminum oxycarbide as claimed and the semiconductor layer as claimed, the substrate inherently would exhibit a CTE sufficiently close to a CTE of the semiconductor layer such that a strain of less than 1 percent would exist between the semiconductor layer having a thickness of 1000 angstroms or less and insulative substrate.

With respect to claim 23, it is well-known to remove a silicon layer from a silicon wafer and bond the silicon layer to an insulative substrate.

With respect to claim 24, it is well-known to remove a layer of silicon by ion implantation.

With respect to claim 25, it is well-known to bond silicon layer by heating. Further with respect to claim 25, the heating temperature is an optimizable parameter.

With respect to claim 26, it is well-known to bond silicon layer by laser.

With respect to claim 27, it is well-known to bond silicon layer by plasma.

With respect to claim 28, it is well-known to chemically-mechanically polish the semiconductor layer.

With respect to claim 48, Yamazaki et al. appear to fail to teach the insulative substrate further comprises of silicon.

However, the formation of substrate comprises of silicon is well-known in the art.

Allowable Subject Matter

Art Unit: 2814

Claims 17-19, 29-39, and 49 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Long Pham whose telephone number is 571-272-1714. The examiner can normally be reached on Mon-Frid, 10am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Long Pham
Primary Examiner
Art Unit 2814

LP